Policy enforcement effect on the competitiveness of the sugar industry: case study from Ukraine

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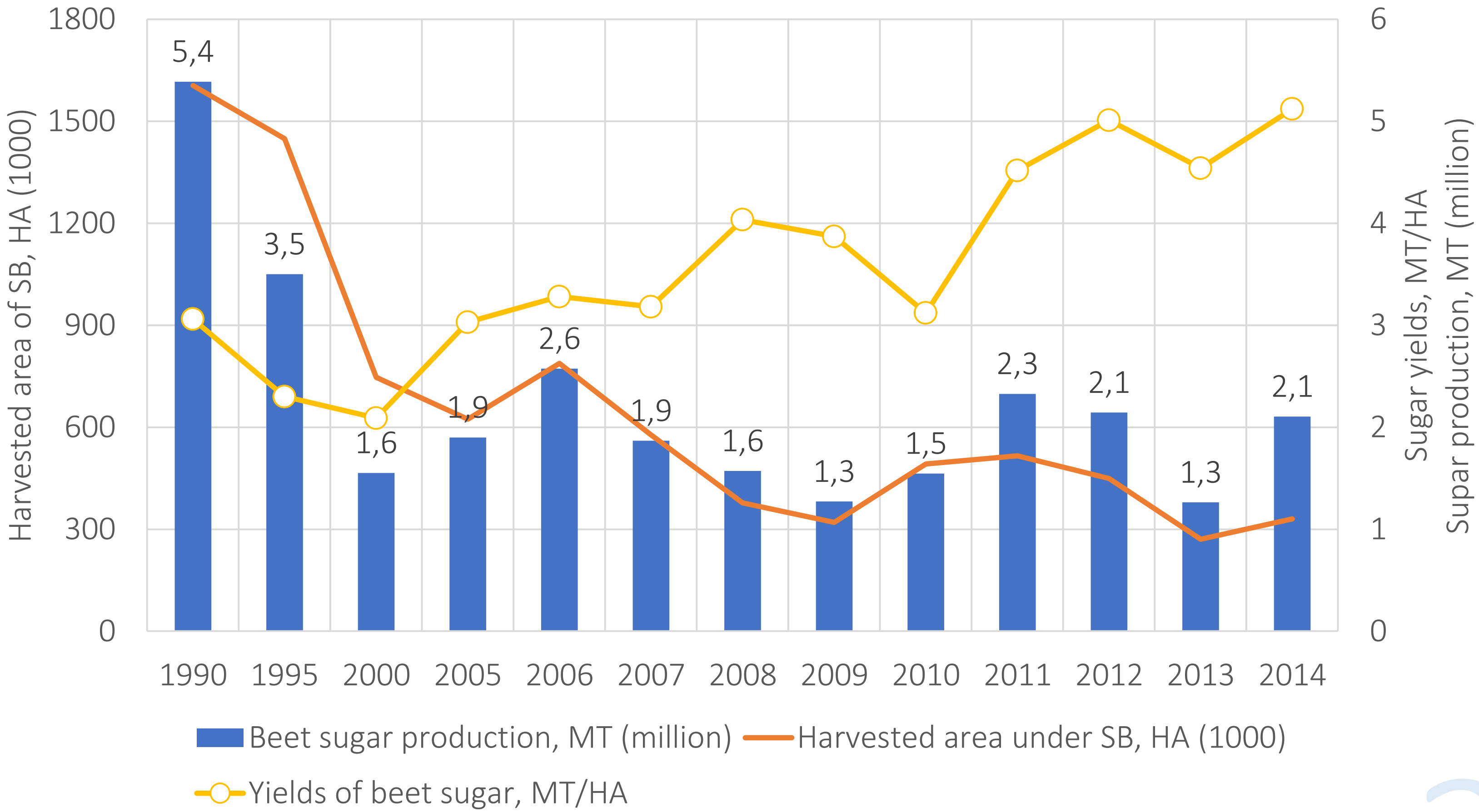
Objectives and methods

- Assessing the effect of present sugar policy on the competitiveness of sugar industry in Ukraine.
- Demonstrating, assessing and justifying the alternatives of the current sugar policy.
- Partial equilibrium approach

Motivation:
Sugar industry in Ukraine

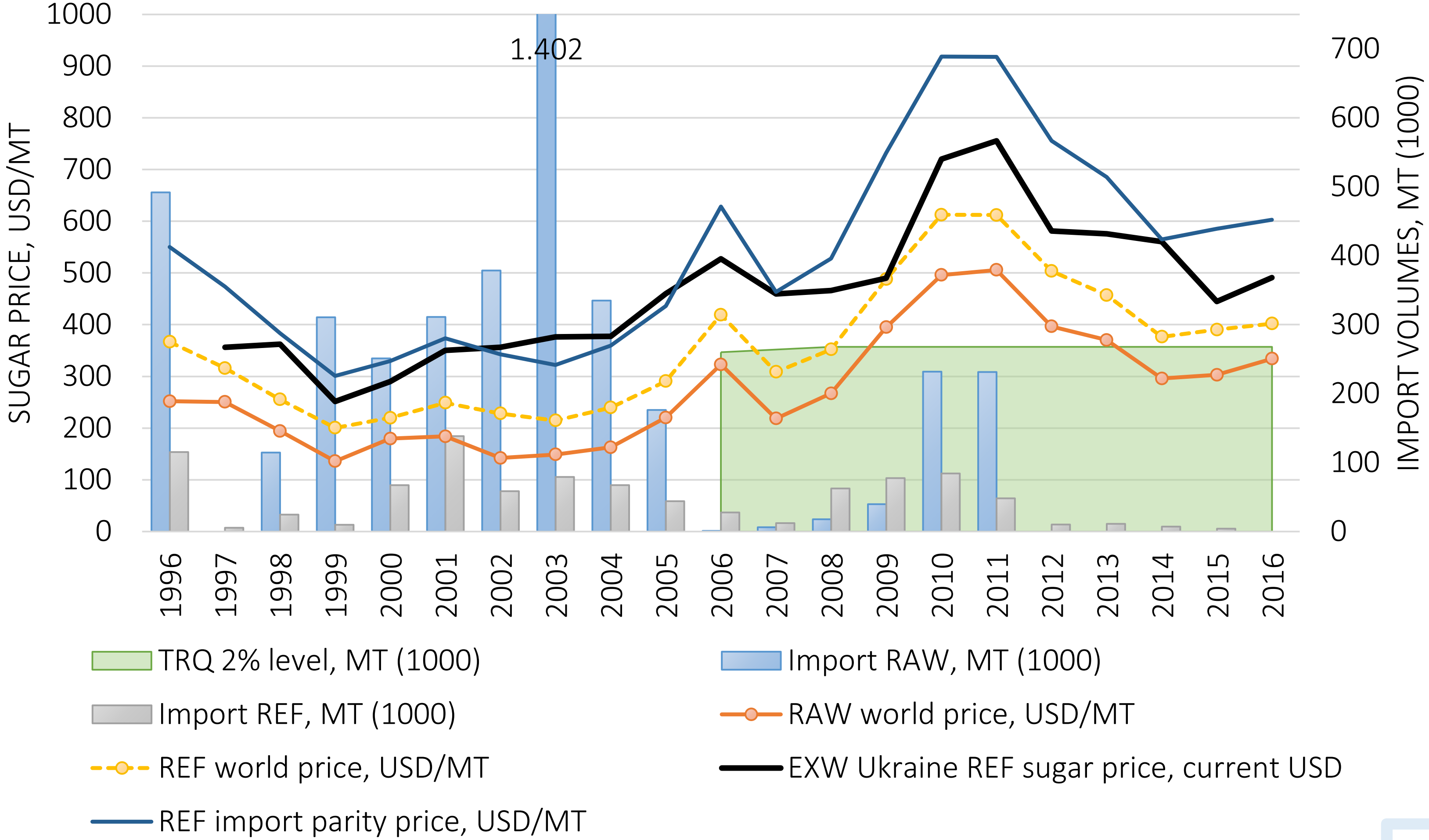


Source: Own calculations based on data from SSSU

Setting: Sugar policy in Ukraine

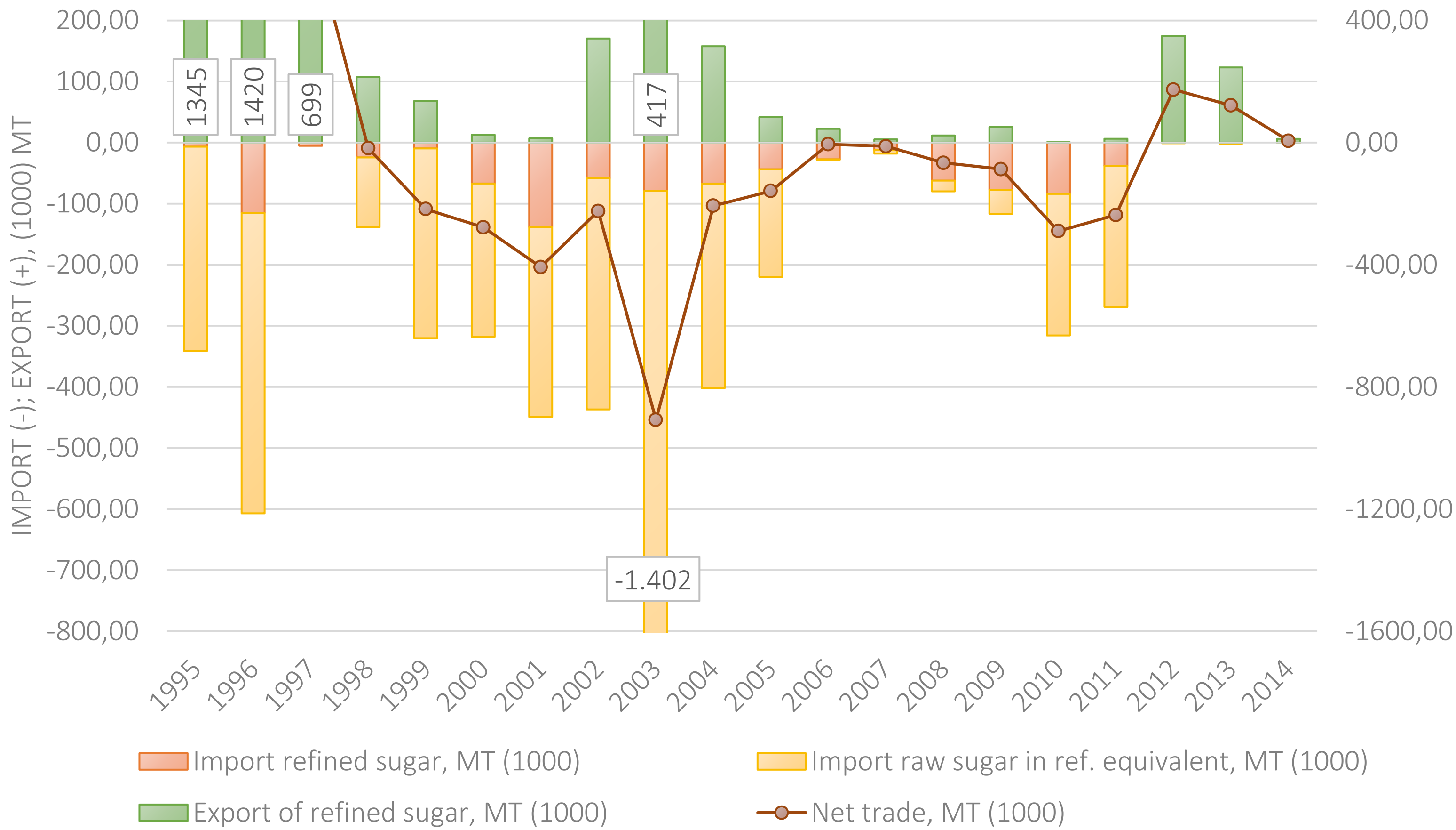
- Introduced in 1999/2000:
- The 2% Tariff-Rate Quota (TRQ) on raw sugar import (introduced in 2006);
- 50% tariff on above TRQ RAW and any refined sugar import;
- In addition: **tolling restriction**, import/export **licenses** and a **semi-official institutional structure** of the sugar industry
- Public sock holding and interventional buying
- Sugar production quota 'A', limits the volumes of beet sugar production intended for the domestic market;
- Minimal prices of the beet sugar under the quota 'A', and minimal prices of sugar beet;

Trade policy (1)



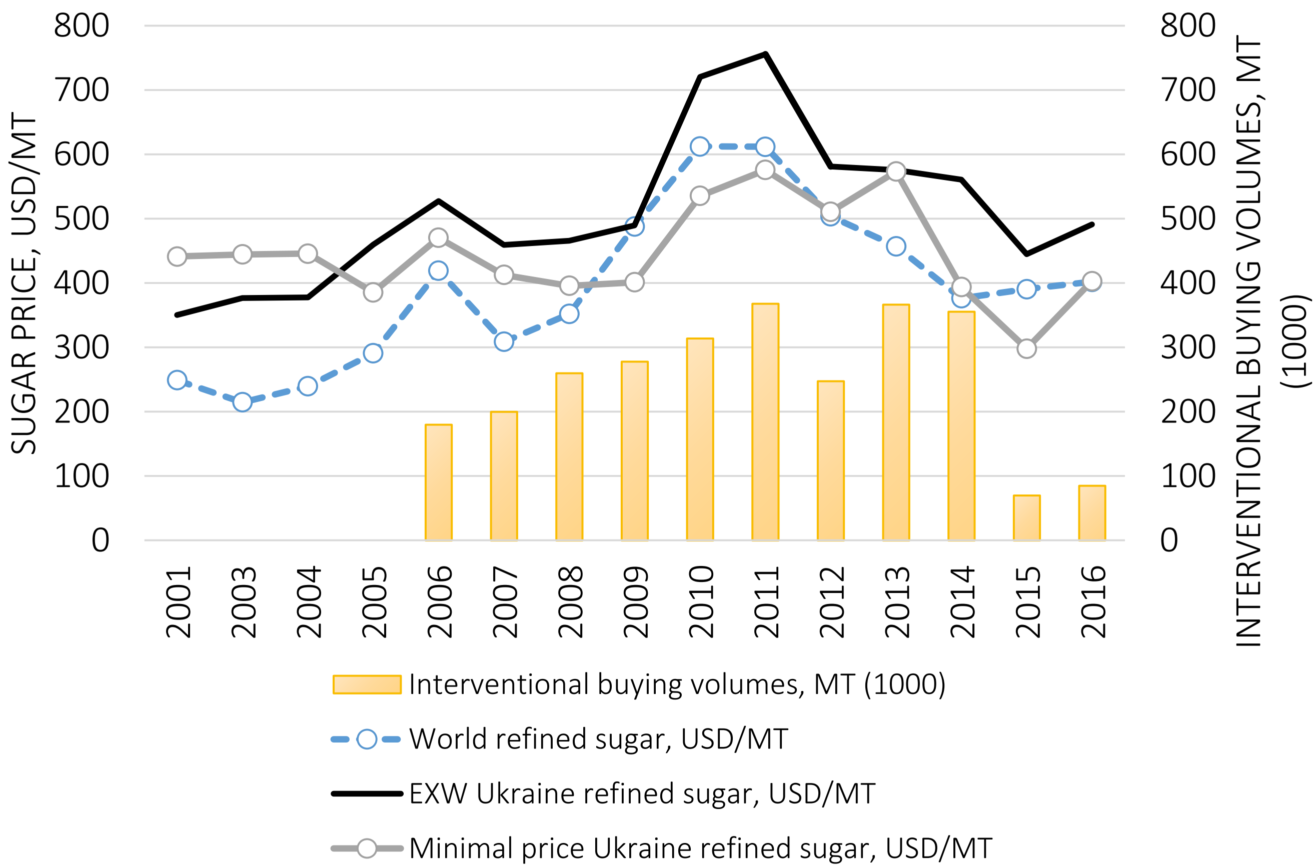
Source: own calculations

Trade policy (2)



Source: own calculations based on various sources

State support



Minimal prices are set by government annually for sugar and sugar beet but are not enforced.

Large share of barter operations.

Source: own calculations based on various sources

Reality: Production quota (1)

Sugar production quota ‘A’

- *is a refinery specific permit to produce beet sugar for the domestic market*
- *untradeable between the refineries*
- *free for obtaining*
- *does not restrict sugar production from the imported raw sugar*
- *over-quota beet sugar must be exported, stored, or processed into non-food uses.*
- *no farm-level quotas for sugar beet production*

Reality: Production quota (2)

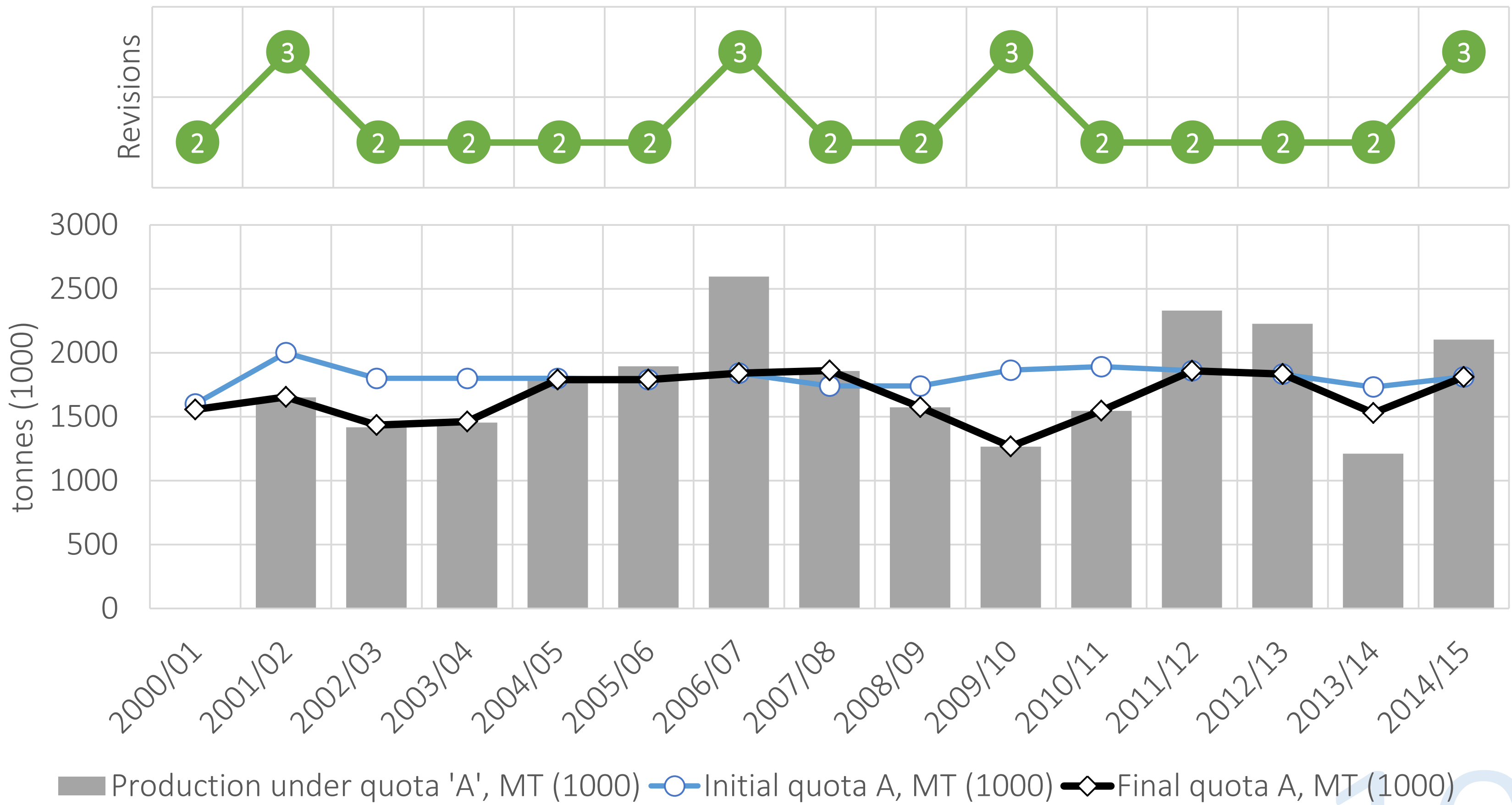
Production quota enforcement:

- Quota should be distributed among refineries on the competitive
- the competition is held behind the closed doors.
- no penalties for not fulfilling the quota requirement.
- quota distribution is revised from 2 to 3 times per years in the middle and in the end of the marketing year.

Institutional structure of the market:

- UKRTSUKOR – association that mediates between producers and the government
- Very little information is accessible

Reality: Production quota (3)



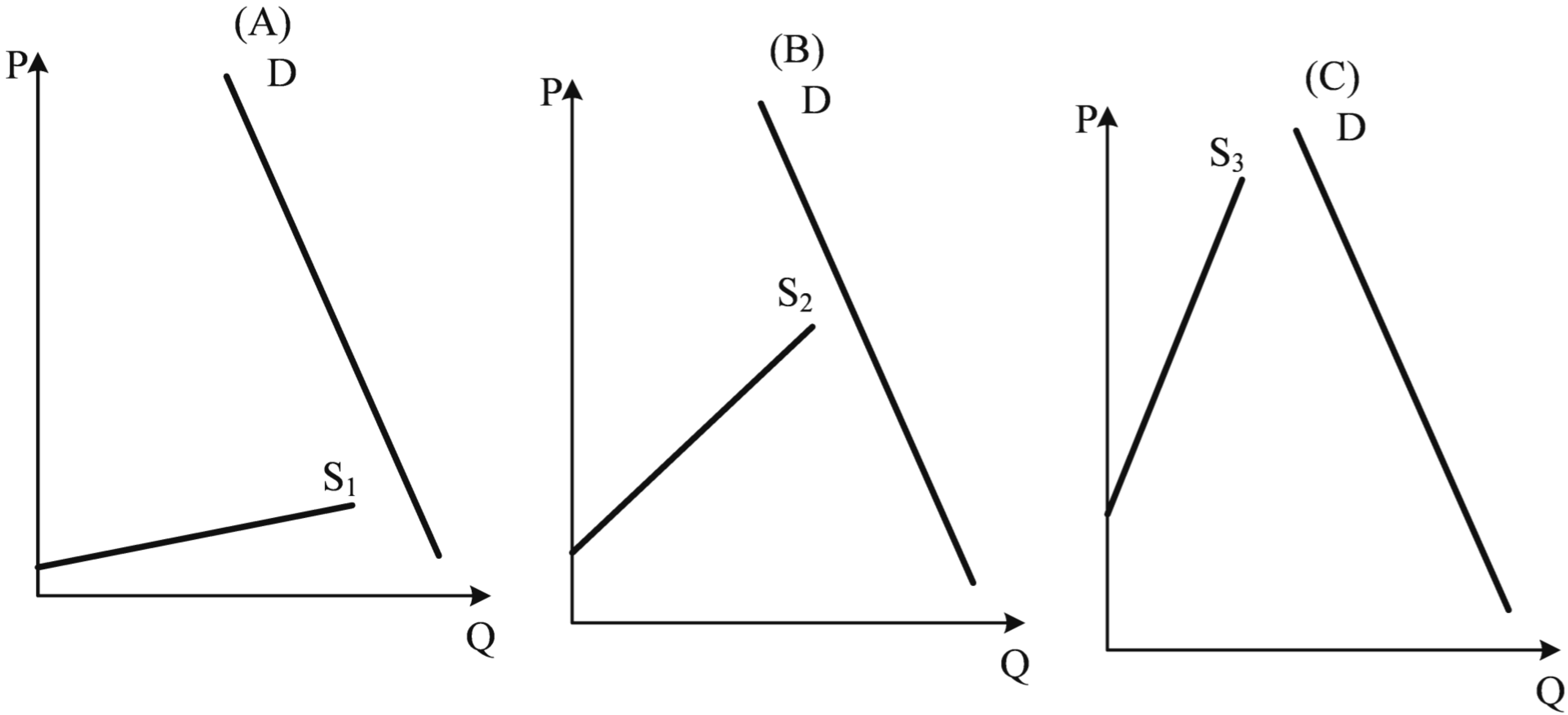
Source: own calculations based on various sources

Reality: Production quota (4) Quota revisions

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
Sugar production under quota 'A', MT (1000)	1650	1417	1455	1788	1895	2595	1859	1573	1267	1546	2331	2226	1212
Initial quota A, MT (1000)	2000	1800	1800	1800	1790	1840	1740	1740	1864	1892	1860	1833	1733
Final quota A, MT (1000)	1656	1434	1462	1791	1790	1840	1861	1575	1267	1546	1860	1833	1528
Root of the sum of the squared differences (see below) for all sub regions:													
Between initial quota - production	124.7	120.6	119.4	705.3	141.9	238.6	157.0	148.2	182.6	183.2	155.3	139.4	176.7
Between final quota - production	7.7	7.5	2.6	2.2	29.6	236.6	3.7	2.1	0.1	0.0	154.5	126.2	108.8

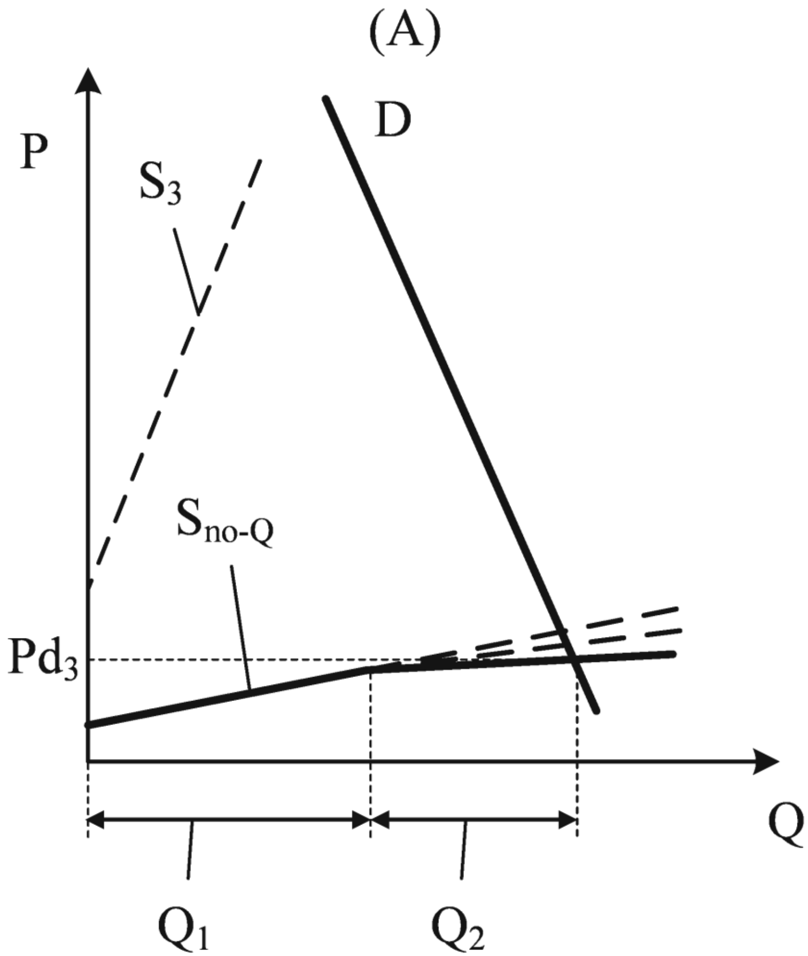
Source: own calculations based on various sources

Example of a market with 3 sugar producers



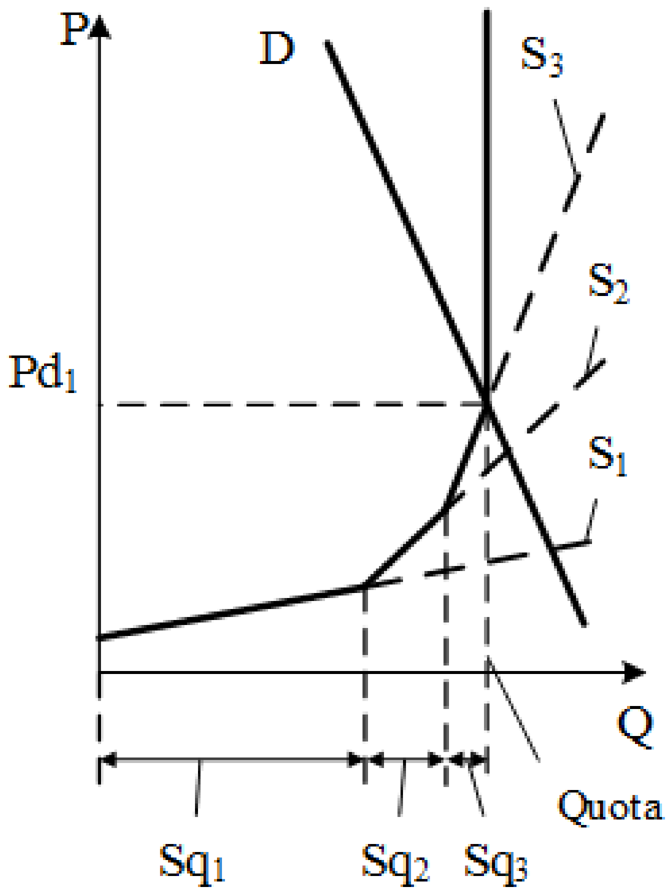
Source: inspired by Nolte,S, Buysse, J., Van Huylenbroek, G. (2012)

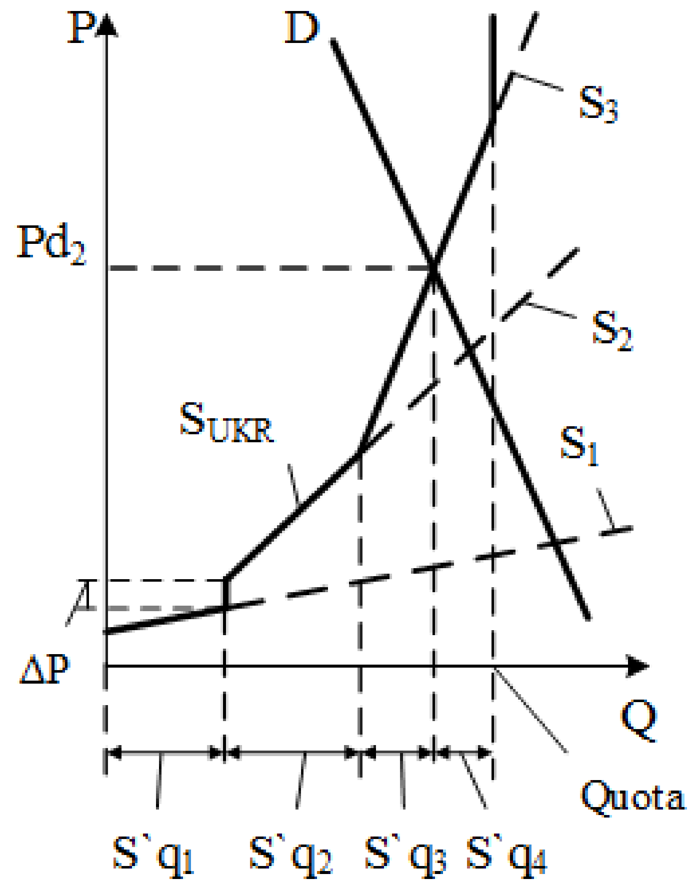
No production quota



Source: inspired by Nolte,S, Buysse, J., Van Huylenbroek, G. (2012)

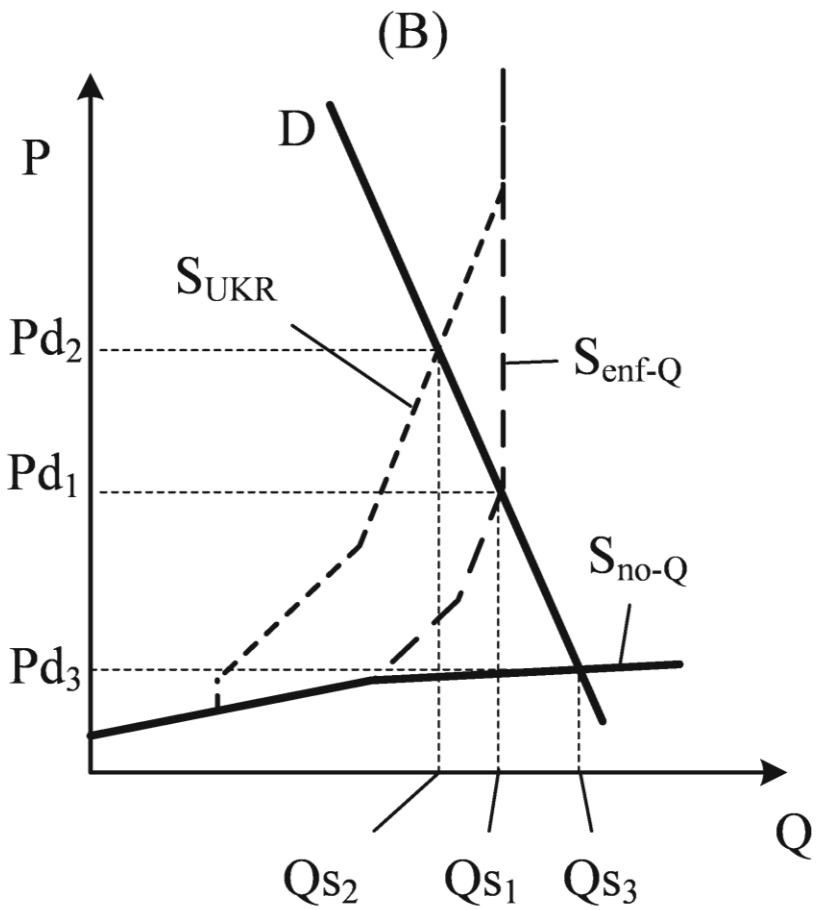
Two ways of quota enforcement





Source: inspired by Nolte,S, Buysse, J., Van Huylenbroek, G. (2012)

All three cases

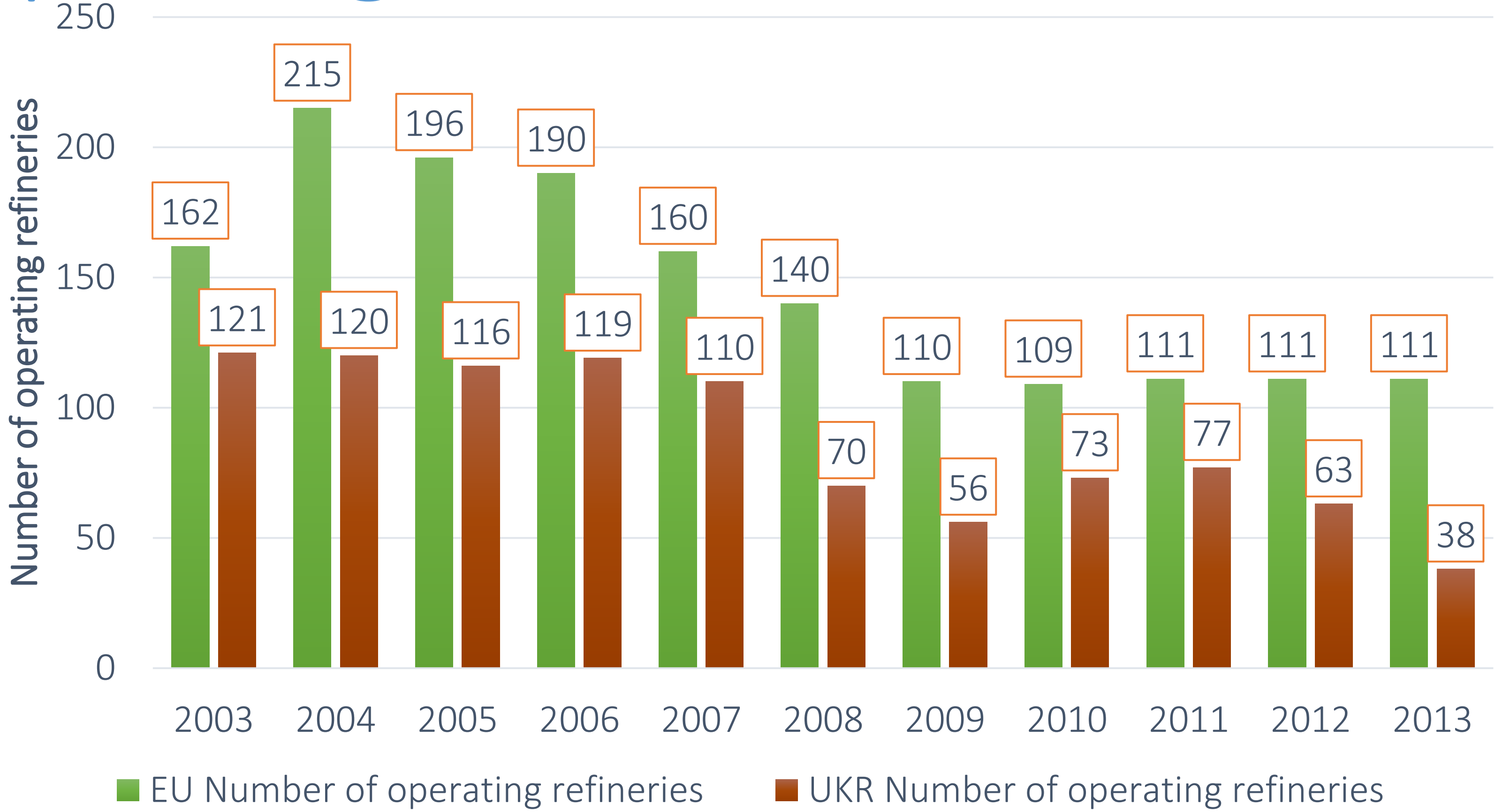


Consequences (1)

Production quota:

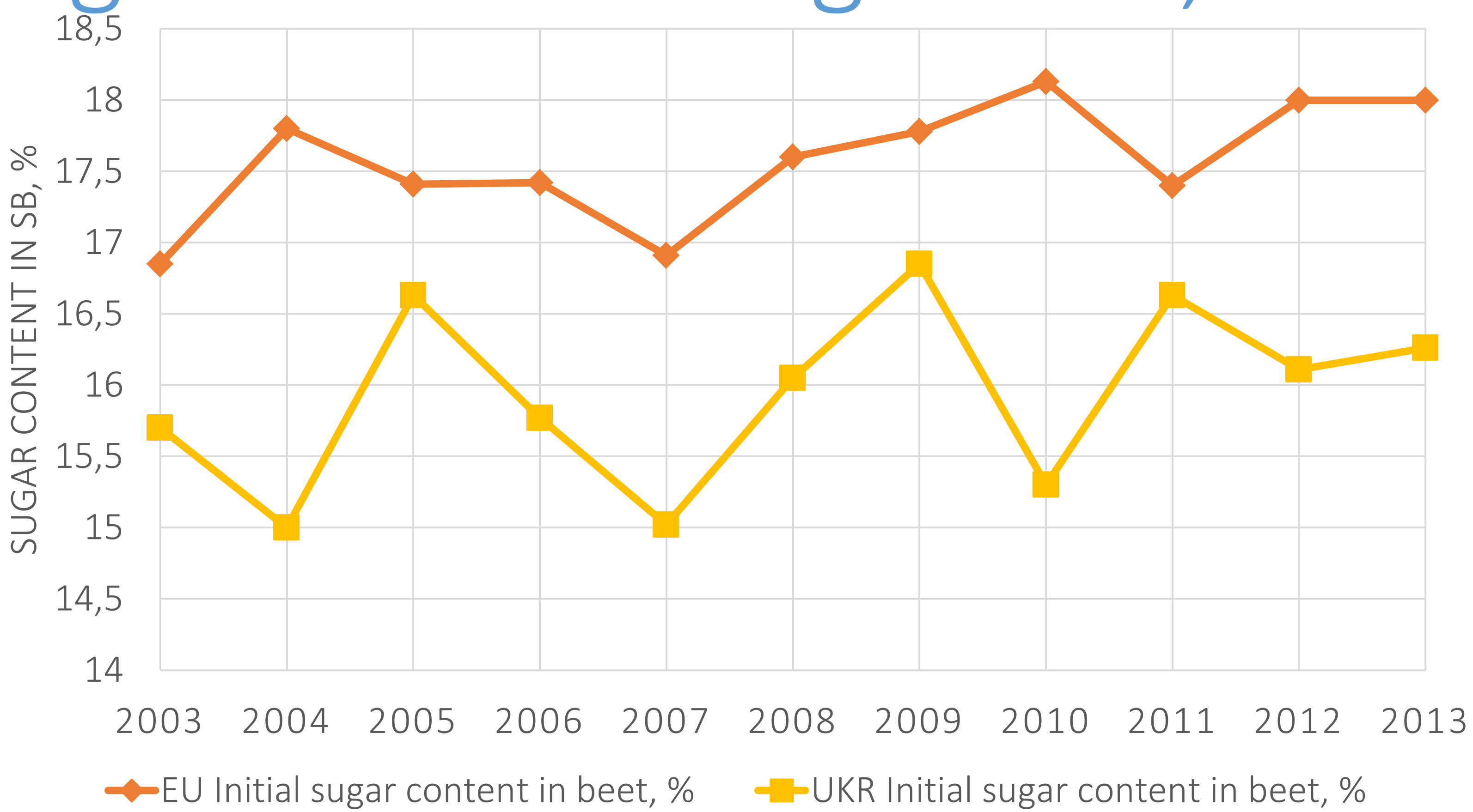
- is not enforced, restricts market access, disincentives producers
- creates opportunities for rent-seeking behaviour among producers
- causes multiple negative externalities:
  - *investment shortage*
  - *barter exchange between sugar beet producers and sugar mills*
- reduces competition on the market and the overall industrial competitiveness

Consequences (2) Number of operating refineries



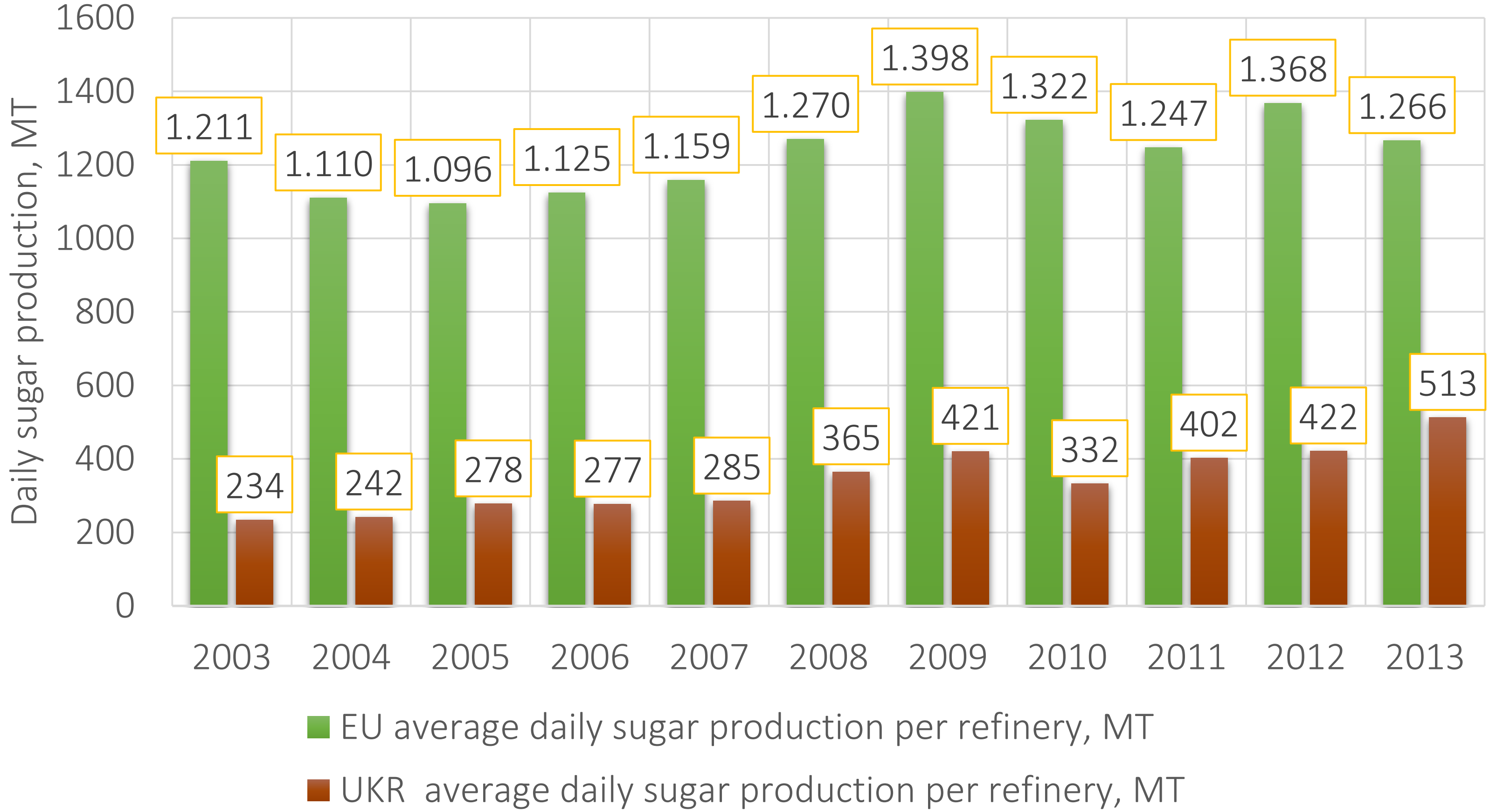
 Source: own calculations based on various sources

Consequences (3)
Sugar content in sugar beet, %



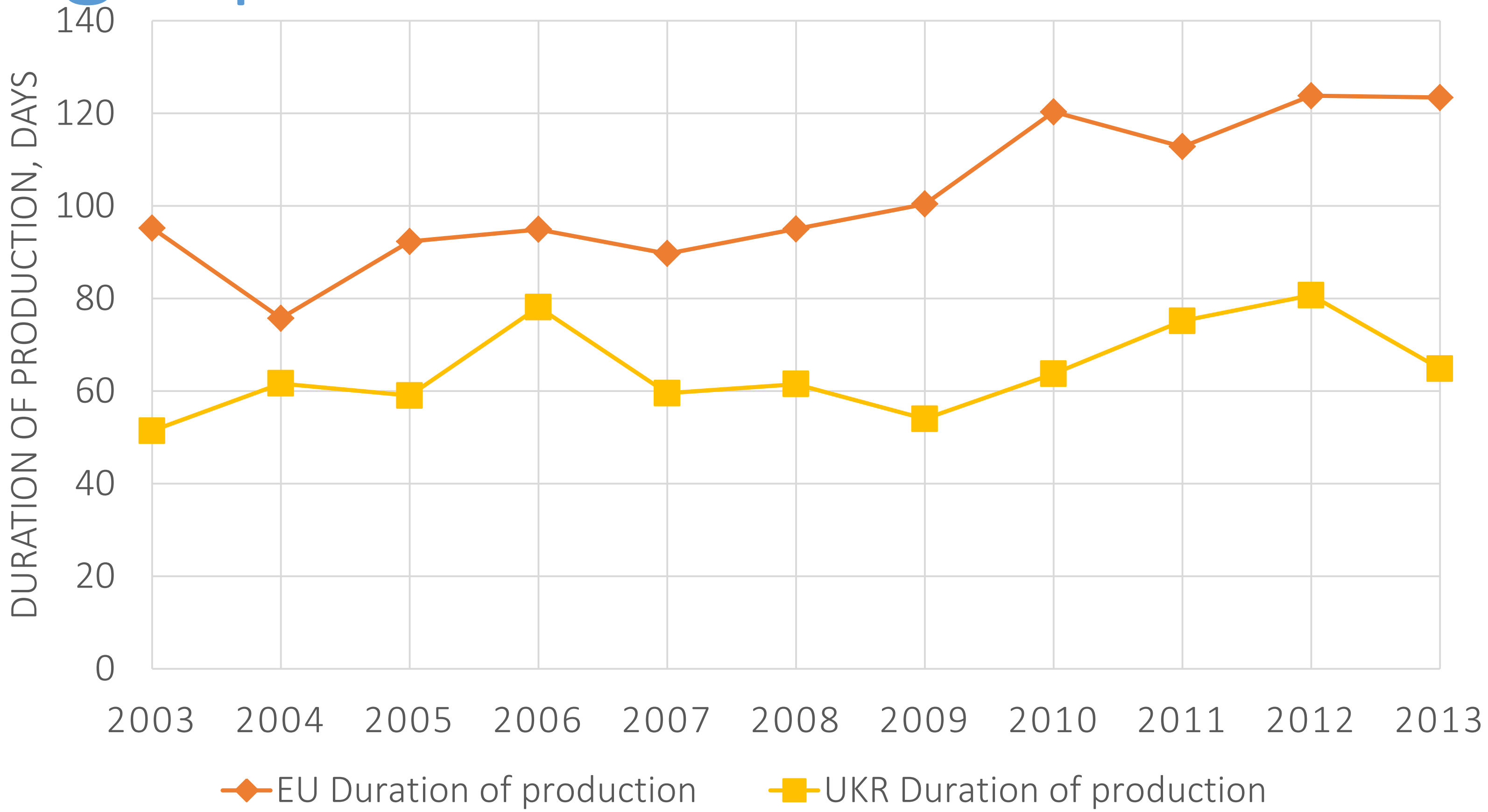
Source: own calculations based on various sources

Consequences (4) Average sugar production per refinery, MT per day



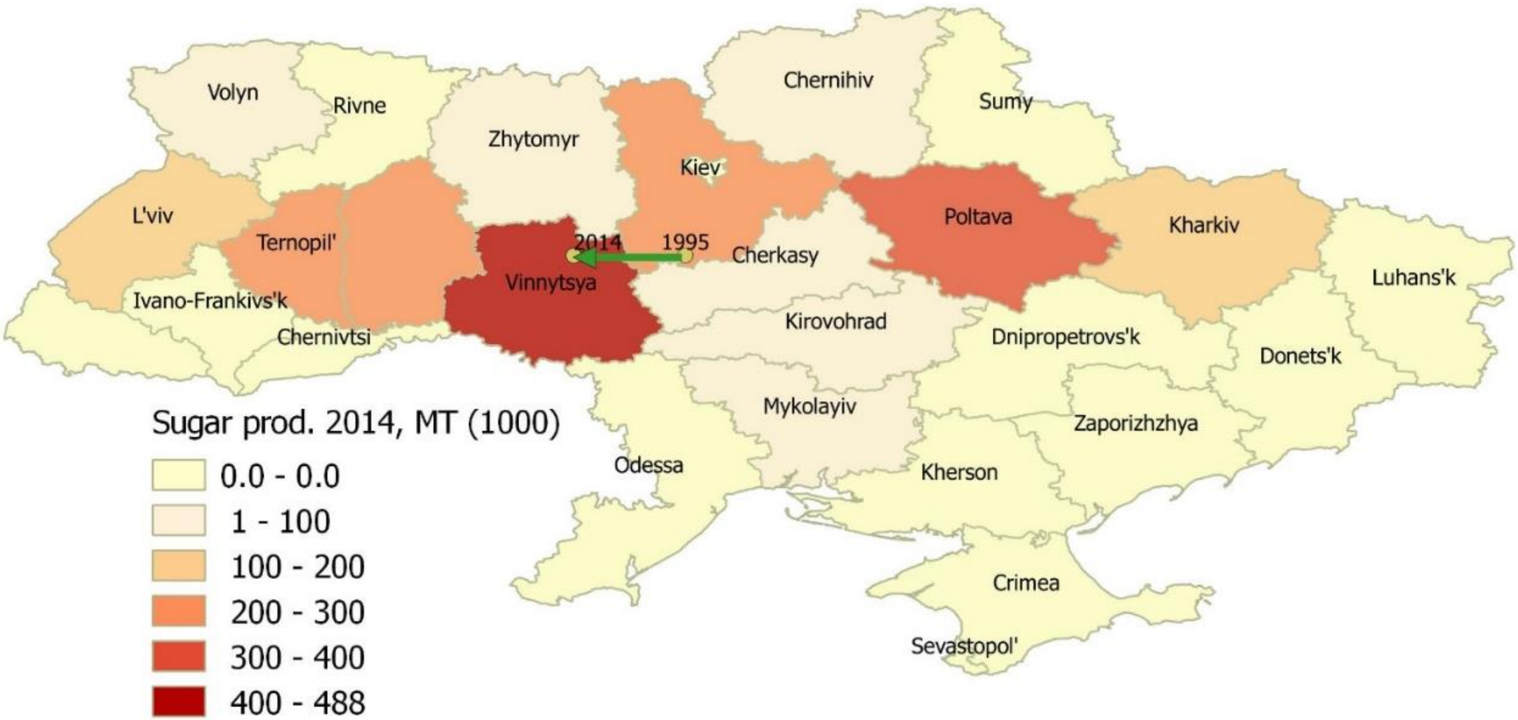
Source: own calculations based on various sources

Consequences (5) Duration of sugar production



Source: own calculations based on various sources

Competitiveness (7) Geographical change



Source: own calculations based on various sources

Modelling exercise

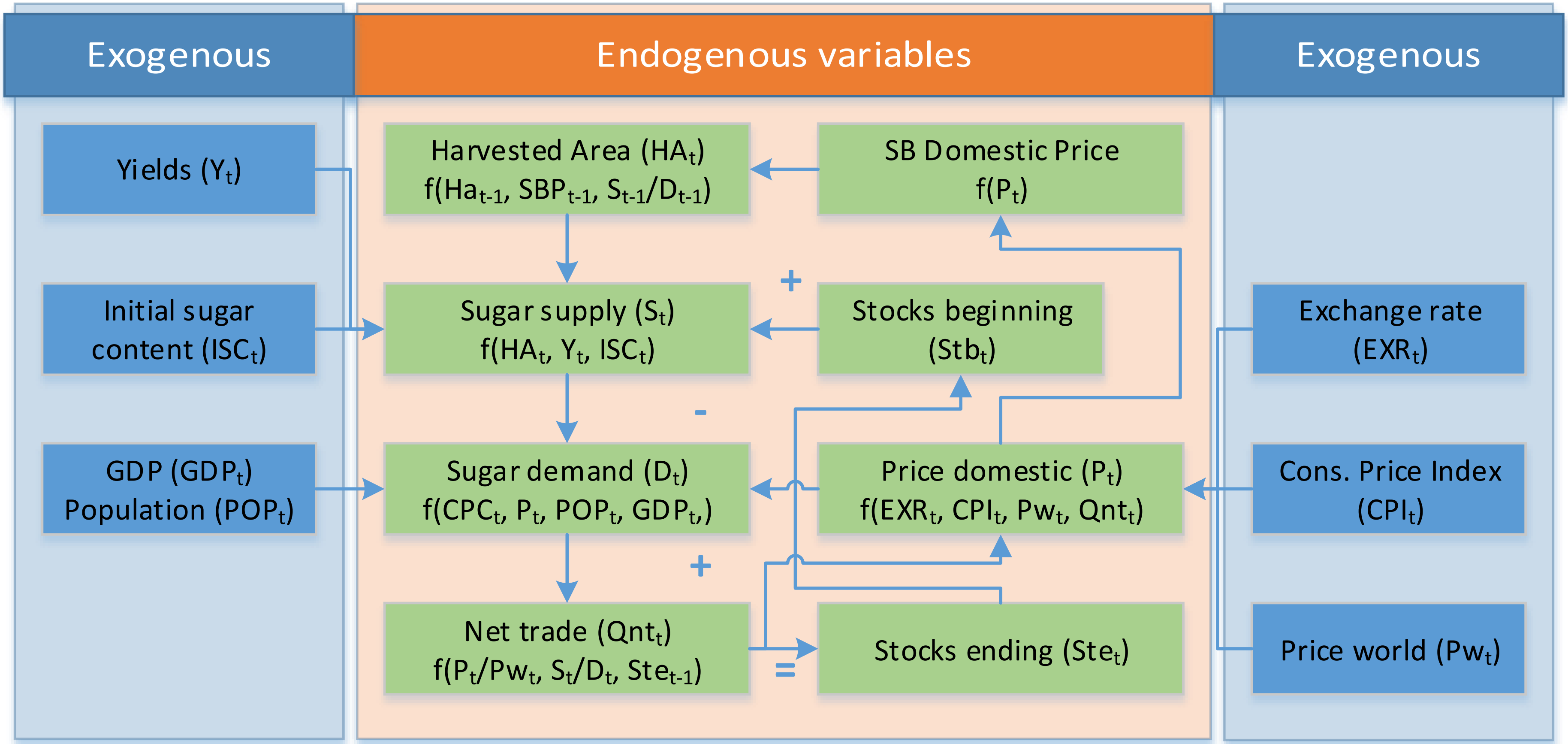
One market net-trade dynamic partial equilibrium model

Solved using the (nlp) Non-linear programming solver in GAMS (i.e. CAPRI).

TRQ tariff switching condition introduced as a sigmoid (logit) function (Britz and Wytzke 2004, 2014 – CAPRI model).

Estimates welfare and market effect of different scenarios.

Model structure



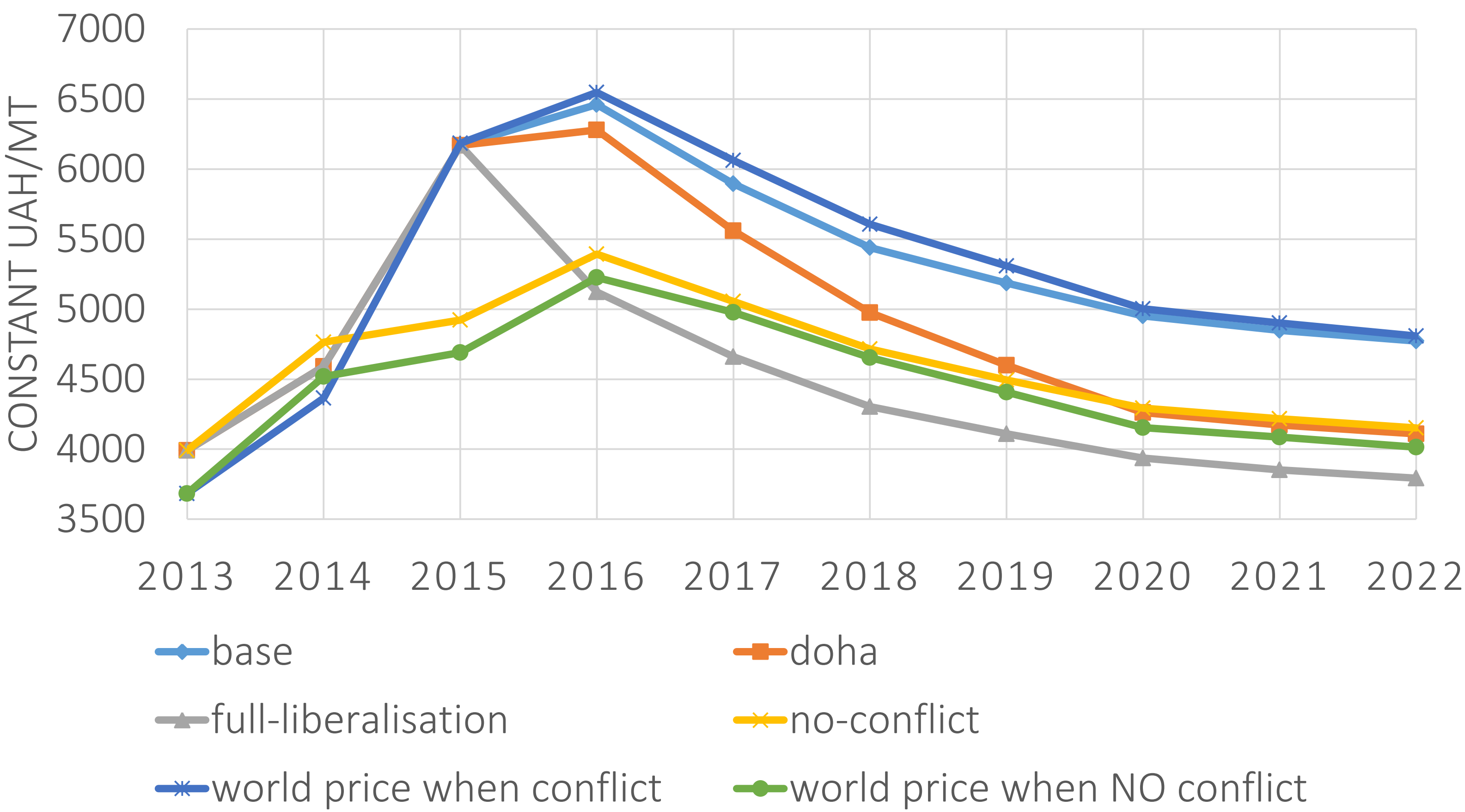
Assumptions and scenarios

Post conflict economic crisis

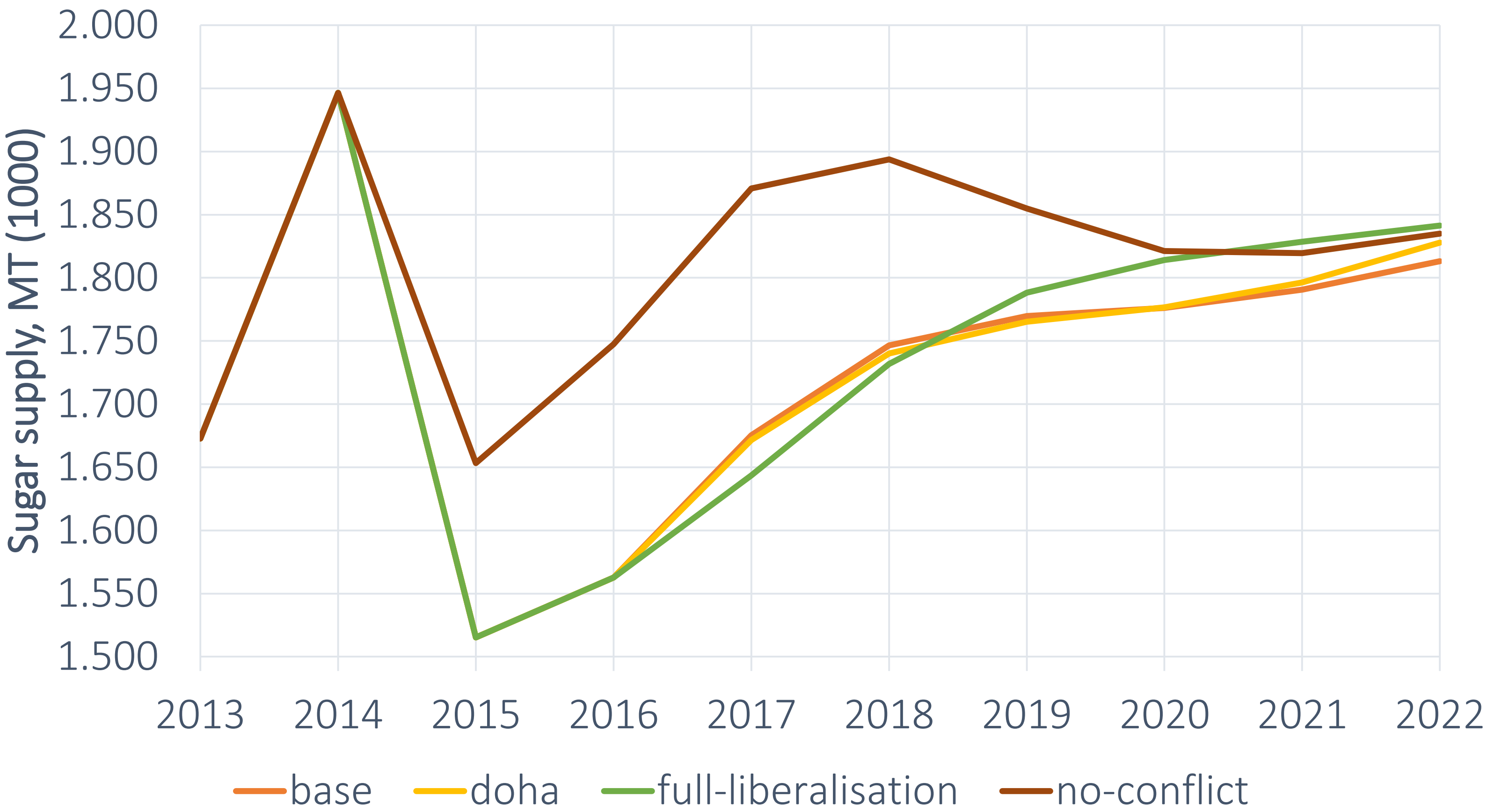
Scenarios:

- Baseline - the conflict and economic crises as it is now
- No-conflict - Hypothetical (impossible) scenario simulated from 2013
- Full liberalization - Abolition of tariffs and TRQ from 2016
- Doha (gradual liberalization) - Gradual reduction of import tariffs and TRQ over 5 years.

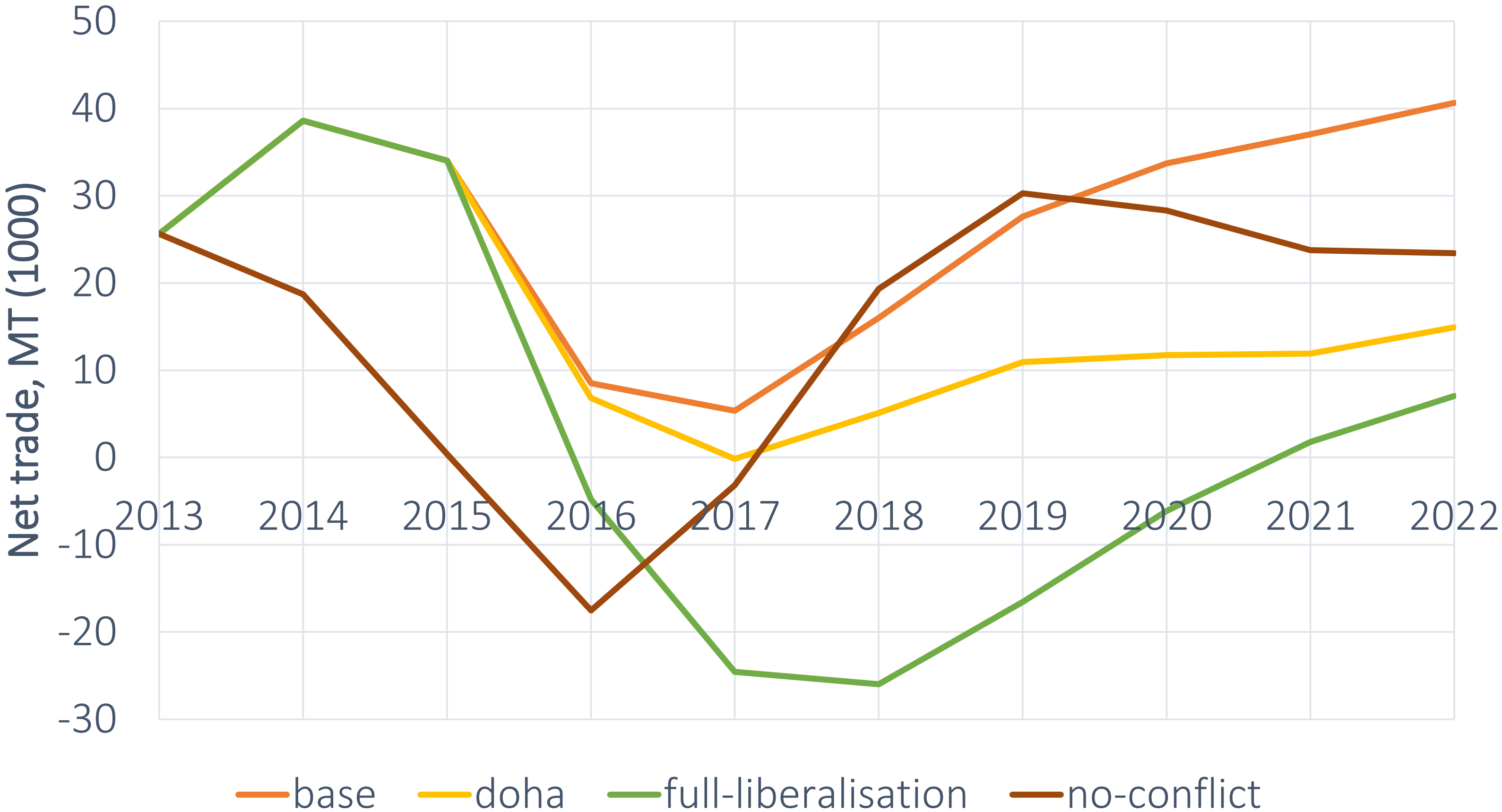
Results – domestic price



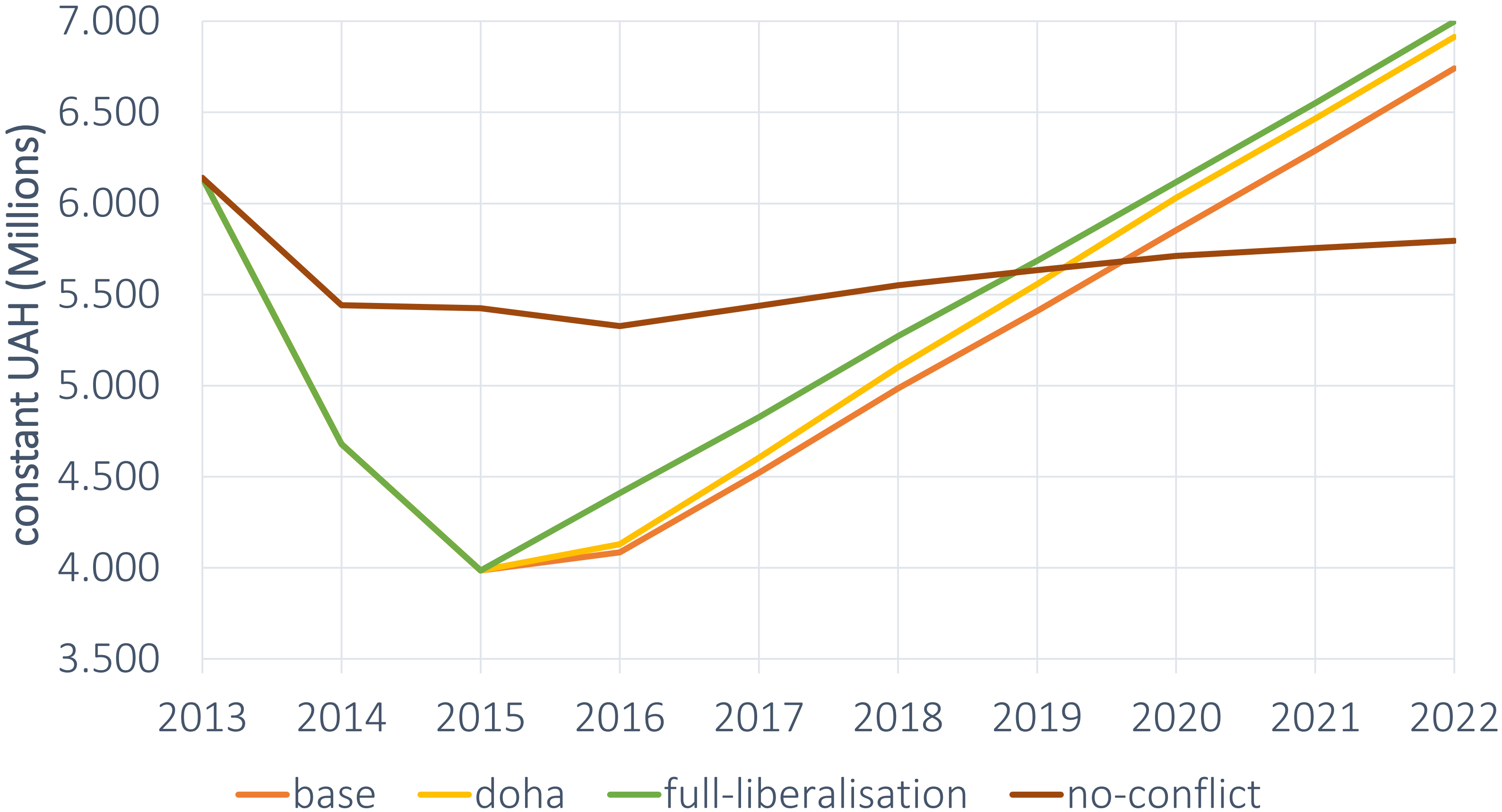
Results – sugar domestic production



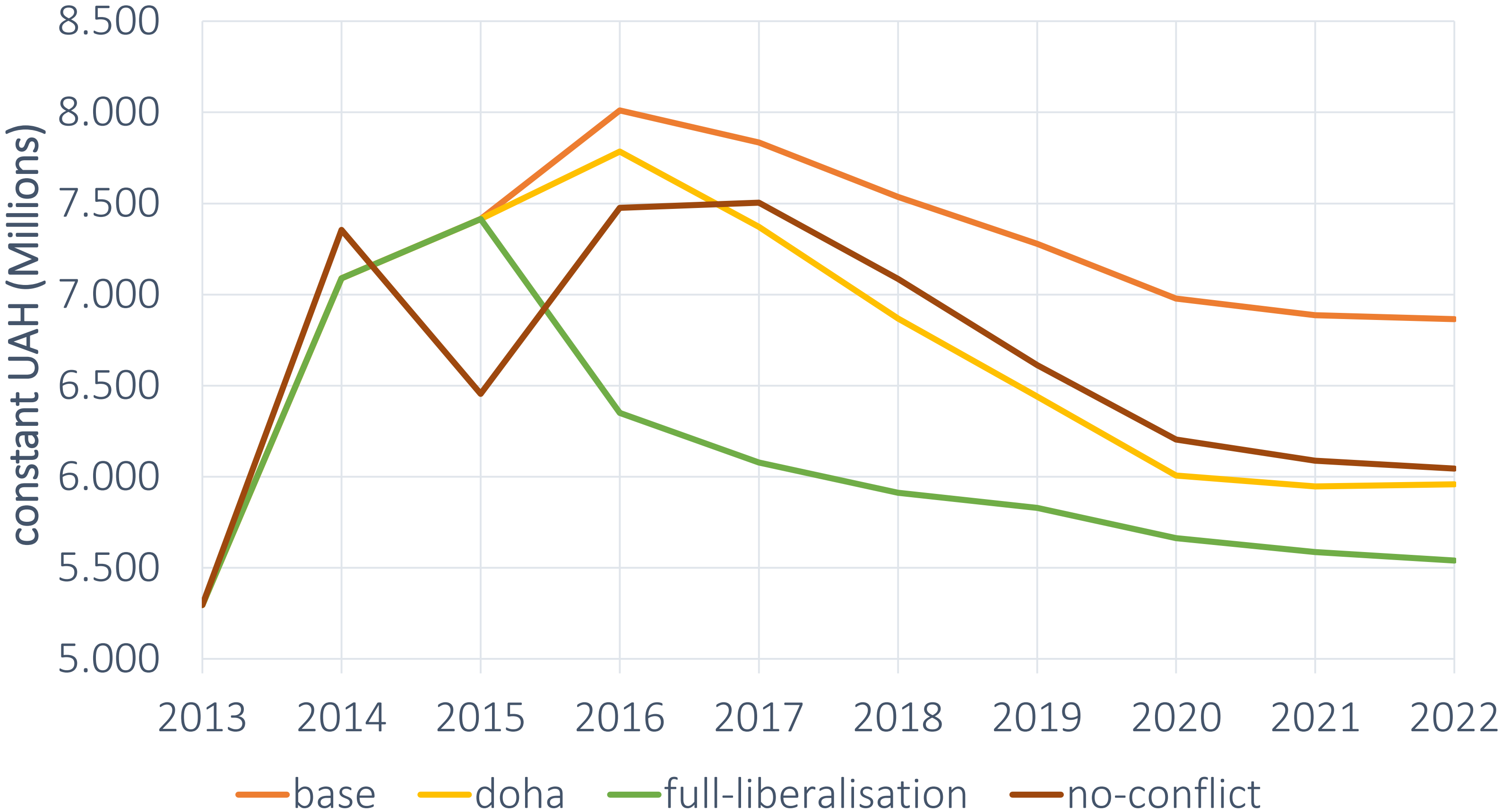
Results – net trade



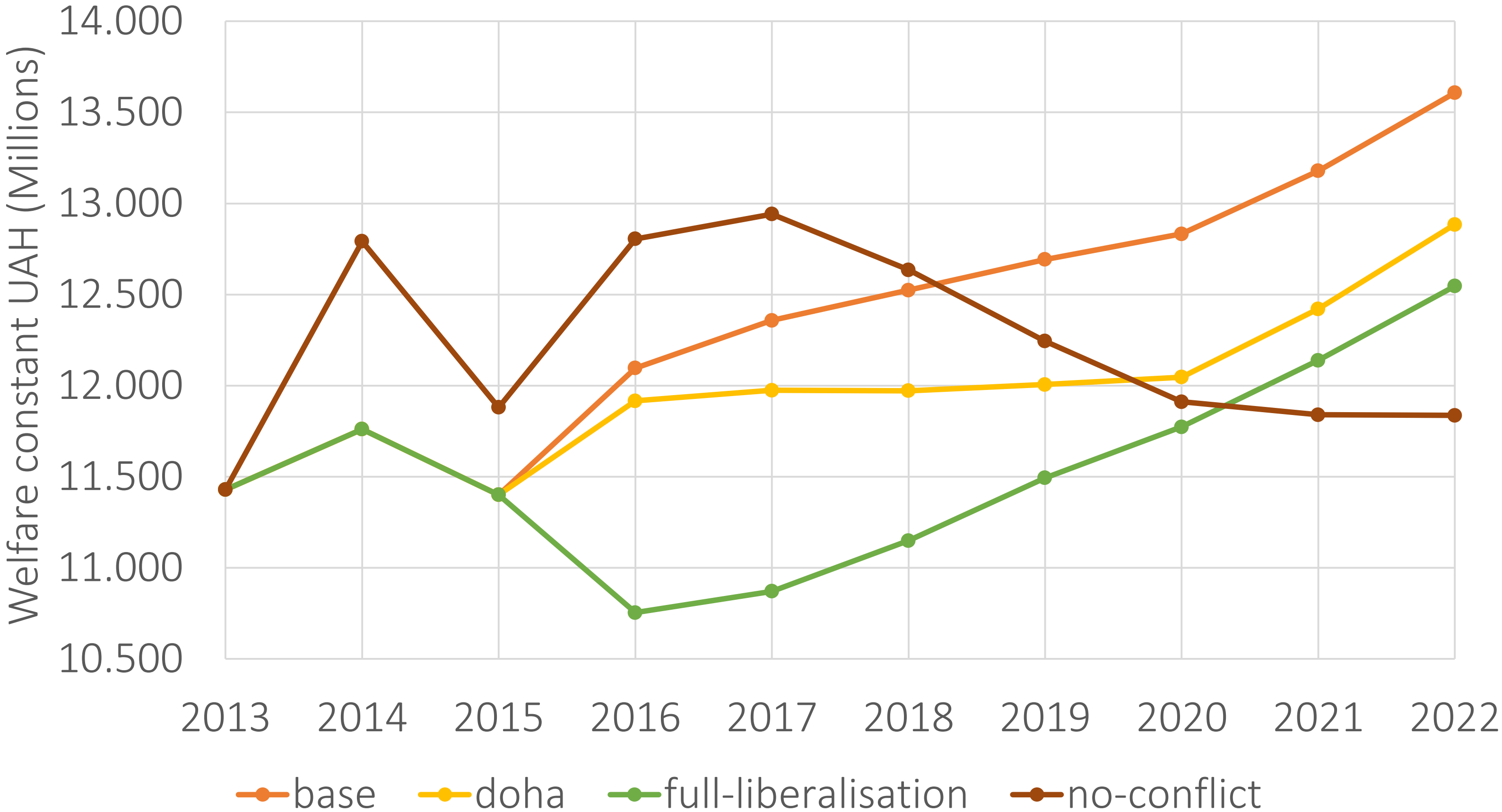
Welfare – consumers surplus



Welfare – producers surplus



Welfare – total welfare



Conclusions

Example of a misrepresented policy

Immediate actions:

- abolition of the sugar production quota;
- market protection through the trade policy;
- reforming of the tolling restriction;

Further works:

- Enough of research – time to act!
- Investments

Research limitation:

- Lacking numerical evidence and consequent difficulty in the problem modelling

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Thank you!

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